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EXAMINER	
BELL, MELTIN	

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Wendi R. Schepler
CARR & FERRELL LLP
Suite 200
2225 East Bayshore Road
Palo Alto, CA 94303

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/754,179	NELKEN ET AL.
	Examiner	Art Unit	
	Meltin Bell	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>03 January 2001 and 04 February 2002</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-78</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-78</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>03 January 2001</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
since a specific reference was included in the first sentence of the specification or in an Application Data Sheet.
37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific
reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

This action is responsive to application **09/754,179** filed 01/03/01 and amended 2/4/02.

Claims 1-78 (New) have been examined.

Priority

Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged.

Information Disclosure Statement

Applicant is respectfully reminded of the ongoing Duty to disclose 37 C.F.R. 1.56 all

pertinent information and material pertaining to the patentability of applicant's claimed

invention, by submitting in a timely manner PTO-1449, Information Disclosure

Statement (IDS) with the filing of applicant's application or thereafter.

Drawings

The United States Patent and Trademark Office of Draftperson's Patent Drawings

Review have reviewed the formal drawings.

The drawings have not been checked to the extent necessary to determine the

presence of all possible minor errors. Applicant's cooperation is required in correcting

any errors of which applicant may become aware in the drawings.

The drawings are objected to because:

- FIG. 4 shows ME and AKB as item 412 when they are contained in the Universal

    Data Model (UDM) of FIG. 1 as item 114.

A proposed drawing correction or corrected drawings are required in reply to the Office

action to avoid abandonment of the application. The objection to the drawings will not

be held in abeyance.

Specification

The specification has not been checked to the extent necessary to determine the

presence of all possible minor errors. Applicant's cooperation is required in correcting

any errors of which applicant may become aware in the specification.

The disclosure is objected to because of the following informalities:

- Lexical Knowledge Base (LKB) 222 on page 13, line 6 of the instant application is

    only present in FIG. 2 of the provisional application 60/176,411 filed **1/13/00**.

- FIG. 4 items should be renumbered to match FIG. 1's numbering:

    o Contact Center 410 (page 25, line 12) should be Contact Center 112

    o Modeling Engine (ME) 412 (page 25, line 13) should be Modeling Engine

       (ME) 116

    o data access services 414 (page 25, line 15-16) should be data access

       services 120

    o automatic response module 416 (page 25, line 18-19) should be automatic

       response module 140

    Appropriate correction is required.

Claim Objections

Claims 63 and 77-78 are objected to because of the following informalities:

Regarding claim 63:

- the preamble to the method doesn't identify its purpose or function

Regarding claim 77:

- the numbering of the dependent claim 78 ('The method of claim 78') may be incorrect

as there is no antecedent basis for the rest of the claim

Regarding claim 78:

- the numbering of the claim differs from the convention of dependent claims following

independent claims: claim 78 depending on claim 77, instead of claim 77 depending on

claim 78). Renumbering the claims and any dependents within the claims is suggested

for following the convention.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The invention as disclosed in claims 41, 55, 63 and 78 are directed to non-statutory

subject matter. Claims 41, 55, 63 and 78 are rejected under 35 U.S.C. 101 because the

claimed invention is not supported by either a credible asserted utility or a well

established utility.

As methods, claims 41, 55, 63 and 78 offer abstract ideas (e.g. "communication",

"response") that are also not applied in the technological arts. Abstract ideas and their

manipulation constitute "descriptive material" that is not patentable, *Warmerdam*, 33

F.3d at 1360, 31 USPQ2d at 1759 and *Schrader*, 22 F.3d at 292-93, 30 USPQ2d at

1457-58, respectively. If the abstract ideas of claims 41, 55, 63 and 78 represented

functional descriptive material consisting of data structures and computer programs

which impart functionality when employed as a computer component (recorded on some

computer readable medium), they become structurally and functionally interrelated to

the medium and will be statutory in most cases since use of technology permits the

function of the descriptive material to be realized. For examples,

- *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir.

  1994) offers claim to data structure stored on a computer readable

  medium that increases computer efficiency held statutory and

- *Warmerdam*, 33 F.3d at 1360-61, 31 USPQ2d at 1759 offers product-by-

  process claim to computer having a specific data structure stored in

  memory also held statutory while

- *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 offers claim to a data

  structure *per se* held nonstatutory.

Because the claims are not claimed to be practiced on a computer and/or stored

on a computer readable medium, they are not limited to practical applications in the

technological arts. Specifically, the claims are methods without any particular practical

application, such as a program running on a computer and stored in a computer

readable medium or memory. On that basis alone, those claims are clearly

nonstatutory.

Claims 41, 55, 63 and 78 are rejected under 35 U.S.C. 101 because the claimed

invention is not supported by either a credible asserted utility or a well established utility.

Claims 41, 55, 63 and 78 are also rejected under 35 U.S.C. 112, first paragraph.

Specifically, since the claimed invention is not supported by either a credible asserted

utility or a well established utility for the reasons set forth above, one skilled in the art

clearly would not know how to use the claimed invention.

Claim Rejections - 35 USC § 112

To expedite a complete examination of the instant application, the claims rejected under

35 U.S.C. 101 (nonstatutory) above are further rejected as set forth below in anticipation

of applicant amending these claims to place them within the four statutory categories of

invention.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of
> making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the
> art to which it pertains, or with which it is most nearly connected, to make and use the same and shall
> set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 41, 55, 63 and 78 are rejected under 35 U.S.C. 112, first paragraph, as failing to

comply with the enablement requirement. The claim(s) contains subject matter which

was not described in the specification in such a way as to enable one skilled in the art to

which it pertains, or with which it is most nearly connected, to make and/or use the

invention. Support for this 35 U.S.C. 112, first paragraph rejections comes from MPEP

2164.07(I)(A):

"As noted in *In re Fouche*, 439 F.2d 1237, 169 USPQ 429 (CCPA 1971), if "compositions are in fact useless, appellant's specification cannot have taught how to use them." 439 F.2d at 1243, 169 USPQ at 434. The examiner should make both rejections (i.e., a rejection under 35 U.S.C. 112, first paragraph and a rejection under 35 U.S.C. 101) where the subject matter of a claim has been shown to be nonuseful or inoperative.
The 35 U.S.C. 112, first paragraph, rejection should indicate that because the invention as claimed does not have utility, a person skilled in the art would not be able to use the invention as claimed, and as such, the claim is defective under 35 U.S.C. 112, first paragraph."

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 77 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention.

Claim 77 recites the limitation "predicted action" in lines 1 and 4. There is

insufficient antecedent basis for this limitation in the claim.

Claim 77 recites the limitation "actual action" in lines 2, 3 and 6. There is

insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

To expedite a complete examination of the instant application, the claims rejected under

35 U.S.C. 101 (nonstatutory) above are further rejected as set forth below in anticipation

of applicant amending these claims to place them within the four statutory categories of

invention.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the

claims under 35 U.S.C. 103(a), the Office presumes that the subject matter of the

various claims was commonly owned at the time any inventions covered therein were

made absent any evidence to the contrary. Applicant is advised of the obligation under

37 CFR 1.56 to point out the inventor and invention dates of each claim that was not

commonly owned at the time a later invention was made in order for the Office to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

Claim 1 – 78 (New) are rejected under 35 U.S.C. 103(a) as being unpatentable over

Elliott et al U.S. Patent Number 5,867,495 (February 2, 1999) in view of

- *Register et al* U.S. Patent Number 5,371,807 (December 6, 1994) in view of

- *Bralich et al* U.S. Patent Number 5,878,385 (March 2, 1999) in view of

- *Tanimura et al* U.S. Patent Number 5,890,142 (March 30, 1999) in view of

- *Bigus* U.S. Patent Number 5,745,652 (April 28, 1998) and further in view of

- *Balogh et al* U.S. Patent Number 5,493,677 (February 20, 1996).

Regarding claim 1:

Elliott et al teaches,

- a contact center configured to send and receive communications (column 197, lines 7-14, "The CAP 10235...customer service center")

- a modeling engine configured to analyze received communications and determine an intent of a received communication (column 22, lines 29-41, "Analysis Services 2144...monitoring, or management")

However, *Elliott et al* doesn't explicitly teach an adaptive knowledge base configured to store models or a feedback module configured to analyze responses to the received communications and provide feedback to the modeling engine, which uses the feedback to update the models in the adaptive knowledge base while

Register et al teaches,

- an adaptive knowledge base configured to store models (column 3, lines 4-27, "A domain specific...loss of accuracy")

- a feedback module configured to analyze responses to the received communications and provide feedback to the modeling engine, which uses the feedback to update the models in the adaptive knowledge base (column 3, lines 37-51, "The system of...the categories selected")

Bralich et al further teach,

- natural language as the basis for communication and responses (column 1, lines 6-12, "The present invention...in real time")

Motivation – The portions of the claimed system, an adaptive knowledge base

configured to store models; a feedback module configured to analyze responses to the

received communications and provide feedback to the modeling engine, which uses the

feedback to update the models in the adaptive knowledge base, would have been highly

desirable features in this art for

- Increasing management and control abilities (*Elliott et al*, column 1, lines 34-38,

   "Users can manage...and routing selection")

- Decreasing costs without compromising quality (*Register et al,* column 1, lines

   13-19, "The growing volume...to textual information")

- Speeding up computation (*Bralich et al,* column 3, lines 58-67, "The grammar

   analysis...grammar analysis problems")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made, to combine *Elliott et al*, *Register et al* and *Bralich et al* to obtain the

invention specified in claim 1, a system for electronic communication management. The

modification would have been obvious because one of ordinary skill in the art would

have been motivated to inexpensively improve system flexibility, function, control and

performance.

Regarding claim 2:

Rejection of claim 1 is incorporated. Therefore, claim 2 is rejected under the same

rationale as claim 1.

Regarding claim 3:

Rejection of claim 1 is incorporated. Claim 3's further limitations are taught in *Elliott et al*: the contact center is configured to send and receive communications via a voice-based communication channel (column 13, lines 28-42, "The ISN 4... for call processing"). Therefore, claim 3 is rejected under the same rationale as claim 1.

Regarding claim 4:

Rejection of claim 1 is incorporated. Therefore, claim 4 is rejected under the same rationale as claim 1.

Regarding claim 5:

Rejection of claim 4 is incorporated. Claim 5's further limitations are taught in *Register et al*: the modeling engine includes a natural language processor configured to analyze the text communications to identify concepts (column 1, lines 55-60, "This has been...concepts to categories"). Therefore, claim 5 is rejected under the same rationale as claim 4.

Regarding claim 6:

Rejection of claim 5 is incorporated. Claim 6's further limitations are taught in *Bralich et al*: the natural language processor performs a morphological analysis of the text communications (column 17, lines 7-33, "In some cases...0s and –2s"). Therefore, claim 6 is rejected under the same rationale as claim 5.

Regarding claim 7:

Rejection of claim 5 is incorporated. Claim 7's further limitations are taught in *Bralich et al*: the natural language processor performs a semantic analysis of the text

communications (column 44, lines 54-57, "The difference between...is available here").

Therefore, claim 7 is rejected under the same rationale as claim 5.

Regarding claim 8:

Rejection of claim 5 is incorporated. Claim 8's further limitations are taught in *Bralich et al*: the natural language processor includes a lexical knowledge base (column 4, lines 12-20, "according to a...dictionary is unique"). Therefore, claim 8 is rejected under the same rationale as claim 5.

Regarding claim 9:

Rejection of claim 1 is incorporated. Claim 9's further limitations (an automatic response module that generates the responses to the received communications) are taught in *Elliott et al* and cited in the rejection of claim 3. Therefore, claim 9 is rejected under the same rationale as claims 1 and 3.

Regarding claim 10:

Rejection of claim 1 is incorporated. Claim 10's further limitations (the responses to the received communications are generated by agents) are taught in *Elliott et al* and cited in the rejection of claim 3. Therefore, claim 10 is rejected under the same rationale as claims 1 and 3.

Regarding claim 11:

Rejection of claim 1 is incorporated. Claim 11's further limitations are taught in *Bralich et al*: the contact center converts received communications into a universal data model format (column 1, lines 45-54, "once one had...grammars were derived"). Therefore, claim 11 is rejected under the same rationale as claim 1.

Regarding claim 12:

Rejection of claim 1 is incorporated. Claim 12's further limitations are taught in *Elliott et al*: an audit module that monitors responses generated by agents for quality (column 27, lines 6-7, "On-line data audits...ensure data integrity"; column 37, lines 41-58, "The dbMon 2240...storage, and roll-up"). Therefore, claim 12 is rejected under the same rationale as claim 1.

Regarding claim 13:

Rejection of claim 12 is incorporated. Therefore, claim 13 is rejected under the same rationale as claim 12.

Regarding claim 14:

Rejection of claim 1 is incorporated. Therefore, claim 14 is rejected under the same rationale as claim 1.

Regarding claim 15:

Rejection of claim 14 is incorporated. Claim 15's further limitations are taught in *Bralich et al*: the adaptive knowledge base includes models for active concepts and models for inactive concepts (column 7, lines 21-29, "The parser receives...to do so"). Therefore, claim 15 is rejected under the same rationale as claim 14.

Regarding claim 16:

Rejection of claim 15 is incorporated. Therefore, claim 16 is rejected under the same rationale as claim 15.

Regarding claim 17:

Rejection of claim 15 is incorporated. Therefore, claim 17 is rejected under the same rationale as claim 15.

Regarding claim 18:

Rejection of claim 1 is incorporated. Therefore, claim 18 is rejected under the same rationale as claim 1.

Regarding claim 19:

Rejection of claim 18 is incorporated. Therefore, claim 19 is rejected under the same rationale as claim 18.

Regarding claim 20:

Rejection of claim 18 is incorporated. Therefore, claim 20 is rejected under the same rationale as claim 18.

Regarding claim 21:

Rejection of claim 18 is incorporated. Therefore, claim 21 is rejected under the same rationale as claim 18.

Regarding claim 22:

Rejection of claim 18 is incorporated. Therefore, claim 22 is rejected under the same rationale as claim 18.

Regarding claim 23:

Rejection of claim 1 is incorporated. Claim 23's further limitations are taught in *Elliott et al*: the modeling engine includes a statistical modeler that creates the models and performs relationship algebra using the models (column 14, lines 30-42, "Operational

Measurements include...and marketing input"). Therefore, claim 23 is rejected under the same rationale as claim 1.

Regarding claim 24:

Rejection of claim 1 is incorporated. Claim 24's further limitations (the modeling engine automatically retrieves data based on the intent of the received communication) are taught in *Elliott et al* and cited in the rejection of claim 3. Therefore, claim 24 is rejected under the same rationale as claims 1 and 3.

Regarding claim 25:

Rejection of claim 24 is incorporated. Claim 25's further limitations (an automatic response module supported by the modeling engine generates a response to the received communication using the retrieved data) are taught in *Elliott et al* and cited in the rejection of claim 12. Therefore, claim 25 is rejected under the same rationale as claims 24 and 12.

Regarding claim 26:

Rejection of claim 24 is incorporated. Claim 26's further limitations (an agent composes a response to the received communication using the retrieved data) are taught in *Elliott et al* and cited in the rejection of claim 12. Therefore, claim 26 is rejected under the same rationale as claims 24 and 12.

Regarding claim 27:

Rejection of claim 1 is incorporated. Therefore, claim 27 is rejected under the same rationale as claim 1.

Regarding claim 28:

Rejection of claim 27 is incorporated. Claim 28's further limitations (the application specific module is an automatic response module) are taught in *Elliott et al* and cited in the rejection of claim 3. Therefore, claim 28 is rejected under the same rationale as claims 27 and 3.

Regarding claim 29:

Rejection of claim 27 is incorporated. Claim 29's further limitations are taught in *Elliott et al*: the application specific module is an expertise routing module (column 23, lines 59-67, "Lower costs for...remote expert"). Therefore, claim 29 is rejected under the same rationale as claim 27.

Regarding claim 30:

Rejection of claim 27 is incorporated. Claim 30's further limitations (the application specific module is an automatic task prioritization module) are taught in *Elliott et al* (FIG. 19G) and cited in the rejection of claims 12 and 3. Therefore, claim 30 is rejected under the same rationale as claims 27, 12 and 3.

Regarding claim 31:

Rejection of claim 27 is incorporated. Claim 31's further limitations are taught in *Elliott et al*: the application specific module is a content filter module that filters content of agent-generated responses (column 21, lines 36-48, "Management Service Gateway...to network management"; column 115, lines 47-63, "when each circuit...SNMS operator actions"). Therefore, claim 31 is rejected under the same rationale as claim 27.

Regarding claim 32:

Rejection of claim 27 is incorporated. Claim 32's further limitations are taught in *Elliott et al*: the application specific module is a content filter module that filters content of agent-generated responses (column 29, lines 36-51, "Central to the...with the Service"; column 115, lines 47-63, "when each circuit...SNMS operator actions"; column 36, lines 52-65, "The dbServer 2236...encrypted before storage"). Therefore, claim 32 is rejected under the same rationale as claim 27.

Regarding claim 33:

Rejection of claim 27 is incorporated. Claim 33's further limitations (the application specific module is a workflow application) are taught in *Elliott et al*: and cited in the rejection of claim 32. Therefore, claim 33 is rejected under the same rationale as claims 27 and 32.

Regarding claim 34:

Rejection of claim 27 is incorporated. Claim 34's further limitations are taught in *Bralich et al*: the application specific module is a Frequently Asked Questions module (column 55, lines 26-47, "The third group...to the question"). Therefore, claim 34 is rejected under the same rationale as claim 27.

Regarding claim 35:

Rejection of claim 27 is incorporated. Therefore, claim 35 is rejected under the same rationale as claim 27.

Regarding claim 36:

Rejection of claim 2 is incorporated. Claim 36's further limitations are taught in *Elliott et al*: a digital signal processing module configured to process received voice communications (column 90, lines 37-44, "FIG. 1F is a...Digital Signal Processor"; column 109, lines 33-62, "FIG. 17 illustrates a...and Modem functions"). Therefore, claim 36 is rejected under the same rationale as claim 2.

Regarding claim 37:

Rejection of claim 36 is incorporated. Therefore, claim 37 is rejected under the same rationale as claim 36.

Regarding claim 38:

Rejection of claim 1 is incorporated. Therefore, claim 38 is rejected under the same rationale as claim 1.

Regarding claim 39:

Rejection of claim 1 is incorporated. Claim 39's further limitations are taught in *Elliott et al*: the received communications include documents (column 129, lines 62-67, "Bastion host 5110...the disclosure of"; column 130, lines 1-5, "which is hereby...provide status information"). Therefore, claim 39 is rejected under the same rationale as claim 1.

Regarding claim 40:

Rejection of claim 39 is incorporated. Claim 40's further limitations (a statistical matching value between the documents and the models is evaluated by a calculated statistical likelihood value) are taught in *Elliott et al* and cited in the rejection of claim 12. Therefore, claim 40 is rejected under the same rationale as claims 39 and 12.

Regarding claim 41:

Elliott et al teaches,

- receiving a communication (column 197, lines 7-14, "The CAP 10235...customer

service center")

- analyzing the communication to determine an intent (column 22, lines 29-41, "Analysis

Services 2144...monitoring, or management")

However, *Elliott et al* doesn't explicitly teach predicting a response to the

communication based on the intent, producing a predicted response, preparing a

response to the communication, producing an actual response or comparing the actual

response to the predicted response to improve subsequent predictions while

Tanimura et al teaches,

- predicting a response to the communication based on the intent, producing a predicted

response (column 1, lines 53-58, "The monitoring apparatus...data storage section")

- preparing a response to the communication, producing an actual response (column 1,

lines 66-67, "since the abnormality...range which is"; column 2, lines 1-4, "determined

from a...the observation system")

- comparing the actual response to the predicted response to improve subsequent

predictions (column 1, lines 58-65, "The predicting section...the compared result")

Register et al teaches,

- an adaptive knowledge base configured to store models (column 3, lines 4-27, "A

domain specific...loss of accuracy")

- a feedback module configured to analyze responses to the received communications and provide feedback to the modeling engine, which uses the feedback to update the models in the adaptive knowledge base (column 3, lines 37-51, "The system of...the categories selected")

Bralich et al teaches,

- natural language as the basis for communication and responses (column 1, lines 6-12, "The present invention...in real time")

Motivation – The portions of the claimed method, predicting a response to the communication based on the intent, producing a predicted response; preparing a response to the communication, producing an actual response; comparing the actual response to the predicted response to improve subsequent predictions, would have been highly desirable features in this art for

- Increasing management and control abilities (*Elliott et al*, column 1, lines 34-38, "Users can manage...and routing selection")

- Better accuracy (*Tanimura et al*, column 5, lines 14-18, "since the prediction...of the system")

- Decreasing costs without compromising quality (*Register et al,* column 1, lines 13-19, "The growing volume...to textual information")

- Speeding up computation (*Bralich et al,* column 3, lines 58-67, "The grammar analysis...grammar analysis problems")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to combine *Elliott et al, Tanimura et al, Register et al* and *Bralich et*

al to obtain the invention specified in claim 41, a method for electronic communication

management. The modification would have been obvious because one of ordinary skill

in the art would have been motivated to inexpensively improve system flexibility,

function, accuracy, control and performance.

Regarding claim 42:

Rejection of claim 41 is incorporated. Claim 41's further limitations are taught in *Bralich*

et al: the step of routing the communication based on semantical content of the

communication (column 44, lines 54-57, "The difference between...is available here").

Therefore, claim 42 is rejected under the same rationale as claim 41.

Regarding claim 43:

Rejection of claim 41 is incorporated. Therefore, claim 43 is rejected under the same

rationale as claim 41.

Regarding claim 44:

Rejection of claim 41 is incorporated. Therefore, claim 44 is rejected under the same

rationale as claim 41.

Regarding claim 45:

Rejection of claim 41 is incorporated. Claim 45's further limitations are taught in *Elliott*

et al: the step of preparing a response is performed by an automatic response module

(column 13, lines 28-42, "The ISN 4... for call processing"). Therefore, claim 45 is

rejected under the same rationale as claim 41.

Regarding claim 46:

Rejection of claim 41 is incorporated. Claim 3's further limitations (the step of preparing

a response is performed by an agent) are taught in *Elliott et al* and cited in the rejection

of claim 45. Therefore, claim 46 is rejected under the same rationale as claim 41.

Regarding claim 47:

Rejection of claim 41 is incorporated. Therefore, claim 47 is rejected under the same

rationale as claim 41.

Regarding claim 48:

Rejection of claim 41 is incorporated. Claim 48's further limitations are taught in *Bralich*

et al: the step of analyzing the communication includes morphological analysis and

semantic analysis (column 17, lines 7-33, "In some cases...0s and –2s"; column 44,

lines 54-57, "The difference between... is available here"). Therefore, claim 48 is

rejected under the same rationale as claim 41.

Regarding claim 49:

Rejection of claim 41 is incorporated. Therefore, claim 49 is rejected under the same

rationale as claim 41.

Regarding claim 50:

Rejection of claim 41 is incorporated. Therefore, claim 50 is rejected under the same

rationale as claim 41.

Regarding claim 51:

Rejection of claim 50 is incorporated. Therefore, claim 51 is rejected under the same

rationale as claim 50.

Regarding claim 52:

Rejection of claim 41 is incorporated. Claim 52's further limitations (the communication

is a voice communication expressed in a natural language) are taught in *Elliott et al* and

cited in the rejection of claim 45. Therefore, claim 52 is rejected under the same

rationale as claim 41.

Regarding claim 53:

Rejection of claim 52 is incorporated. Claim 48's further limitations are taught in *Elliott*

et al: the step of analyzing the communication includes digital signal processing of the

voice communication (column 90, lines 37-44, "FIG. 1F is a...Digital Signal Processor";

column 109, lines 33-62, "FIG. 17 illustrates a...and Modem functions"). Therefore,

claim 53 is rejected under the same rationale as claim 52.

Regarding claim 54:

Rejection of claim 53 is incorporated. Therefore, claim 54 is rejected under the same

rationale as claim 53.

Regarding claim 55:

Elliott et al teaches,

- receiving the relationship event (column 120, lines 9-11, "As network events...isolates

the fault")

- analyzing the relationship event to identify concepts in the relationship event (column

73, lines 42-67, "OOP allows the...characteristics of a"; column 74, lines 1-19, "standard

piston defined...the real world")

- building an event model of the relationship event using the concepts (column 39, lines

56-67, "The Resource Management... Architecture in particular"; column 40, lines 1-25,

"c) Objectives... that utilize them")

- routing the relationship event for action based on the category scores (column 36,

lines 52-61, "The dbServer 2236... any active subscriptions")

However, *Elliott et al* doesn't explicitly teach mapping the event model to models in a

knowledge base to produce category scores while

Register et al teaches,

- an adaptive knowledge base configured to store models (column 3, lines 4-27, "A

domain specific... loss of accuracy")

- mapping the event model to models in a knowledge base to produce category scores

(column 2, lines 35-51, "The method of... language input text")

Motivation – The portions of the claimed method, mapping the event model to models in

a knowledge base to produce category scores, would have been a highly desirable

feature in this art for

- Increasing management and control abilities (*Elliott et al*, column 1, lines 34-38,

  "Users can manage... and routing selection")

- Decreasing costs without compromising quality (*Register et al,* column 1, lines

  13-19, "The growing volume... to textual information")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made, to combine *Elliott et al* and *Register et al* to obtain the invention

specified in claim 55, a method for processing a relationship event. The modification

would have been obvious because one of ordinary skill in the art would have been

motivated to inexpensively improve system flexibility, control and function.

Regarding claim 56:

Elliott et al teaches,

- receiving a communication (column 197, lines 7-14, "The CAP 10235...customer

service center")

- analyzing the communication to determine intent (column 22, lines 29-41, "Analysis

Services 2144...monitoring, or management")

However, *Elliott et al* doesn't explicitly teach predicting a response to the

communication based on intent, producing a predicted response, preparing a response

to the communication, producing an actual response or comparing the actual response

and the predicted response to improve subsequent predictions while

Tanimura et al teaches,

- predicting a response to the communication based on the intent, producing a predicted

response (column 1, lines 53-58, "The monitoring apparatus...data storage section")

- preparing a response to the communication, producing an actual response (column 1,

lines 66-67, "since the abnormality...range which is"; column 2, lines 1-4, "determined

from a...the observation system")

- comparing the actual response and the predicted response to improve subsequent

predictions (column 1, lines 58-65, "The predicting section...the compared result")

Bigus teaches,

- neural networks for dynamically modeling system configurations and performance as well as controlling allocation of resources (Abstract, sentence 1-4, "In a system... model neural network")

Register et al teaches,

- an adaptive knowledge base configured to store models (column 3, lines 4-27, "A domain specific... loss of accuracy")

- a feedback module configured to analyze responses to the received communications and provide feedback to the modeling engine, which uses the feedback to update the models in the adaptive knowledge base (column 3, lines 37-51, "The system of... the categories selected")

Bralich et al teaches,

- natural language as the basis for communication and responses (column 1, lines 6-12, "The present invention... in real time")

Motivation – The portions of the claimed method, predicting a response to the communication based on intent, producing a predicted response; preparing a response to the communication, producing an actual response; comparing the actual response and the predicted response to improve subsequent predictions, would have been highly desirable features in this art for

- Increasing management and control abilities (*Elliott et al*, column 1, lines 34-38, "Users can manage... and routing selection")

- Better accuracy (*Tanimura et al*, column 5, lines 14-18, "since the prediction... of the system")

- Greater control of system performance (*Bigus*, column 3, lines 37-45, "two fundamental ideas...resource management algorithms")

- Decreasing costs without compromising quality (*Register et al*, column 1, lines 13-19, "The growing volume...to textual information")

- Speeding up computation (*Bralich et al*, column 3, lines 58-67, "The grammar analysis...grammar analysis problems")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to combine *Elliott et al*, *Tanimura et al*, *Bigus*, *Register et al* and *Bralich et al* to obtain the invention specified in claim 56, a method for electronic communication management. The modification would have been obvious because one of ordinary skill in the art would have been motivated to inexpensively improve system flexibility, function, accuracy, control and performance.

Regarding claim 57:

Rejection of claim 56 is incorporated. Therefore, claim 57 is rejected under the same rationale as claim 56.

Regarding claim 58:

Rejection of claim 56 is incorporated. Claim 58's further claim limitations are taught in *Bigus*: the step of comparing the actual response and the predicted response occurs off-line (column 9, lines 30-38, "This process of...supervised learning algorithm"). Therefore, claim 58 is rejected under the same rationale as claim 56.

Regarding claim 59:

Elliott et al teaches,

- receiving the relationship event (column 120, lines 9-11, "As network events...isolates

the fault")

- analyzing the relationship event to identify concepts in the relationship event (column

73, lines 42-67, "OOP allows the...characteristics of a"; column 74, lines 1-19, "standard

piston defined...the real world")

- building an event model of the relationship event using the concepts (column 39, lines

56-67, "The Resource Management...Architecture in particular"; column 40, lines 1-25,

"c) Objectives...that utilize them")

- routing the relationship event for action based on the category scores (column 36,

lines 52-61, "The dbServer 2236...any active subscriptions")

However, *Elliott et al* doesn't explicitly teach mapping the event model to models in a

knowledge base to produce category scores while

Register et al teaches,

- an adaptive knowledge base configured to store models (column 3, lines 4-27, "A

domain specific...loss of accuracy")

- mapping the event model to models in a knowledge base to produce category scores

(column 2, lines 35-51, "The method of...language input text")

Motivation – The portions of the claimed method, mapping the event model to models in

a knowledge base to produce category scores, would have been a highly desirable

feature in this art for

- Increasing management and control abilities (*Elliott et al*, column 1, lines 34-38,

  "Users can manage...and routing selection")

- Decreasing costs without compromising quality (*Register et al,* column 1, lines

  13-19, "The growing volume...to textual information")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made, to combine *Elliott et al* and *Register et al* to obtain the invention

specified in claim 55, a method for processing a relationship event. The modification

would have been obvious because one of ordinary skill in the art would have been

motivated to inexpensively improve system flexibility, function and control.

Regarding claim 60:

Elliott et al teaches,

- means for receiving a communication (column 197, lines 7-14, "The CAP

10235...customer service center")

- means for analyzing the communication to determine intent (column 22, lines 29-41,

"Analysis Services 2144...monitoring, or management")

However, *Elliott et al* doesn't explicitly teach means for predicting a response to the

communication based on the intent, producing a predicted response, means for

preparing a response to the communication, producing an actual response or means for

comparing the actual response and the predicted response to improve subsequent

predictions while

Tanimura et al teaches,

- means for predicting a response to the communication based on the intent, producing

a predicted response (column 1, lines 53-58, "The monitoring apparatus...data storage

section")

- means for preparing a response to the communication, producing an actual response

(column 1, lines 66-67, "since the abnormality...range which is"; column 2, lines 1-4,

"determined from a...the observation system")

- means for comparing the actual response and the predicted response to improve

subsequent predictions (column 1, lines 58-65, "The predicting section...the compared

result")

Motivation – The portions of the claimed system, means for predicting a response to the

communication based on the intent, producing a predicted response; preparing a

response to the communication, producing an actual response; comparing the actual

response and the predicted response to improve subsequent predictions, would have

been highly desirable features in this art for

- Increasing management and control abilities (*Elliott et al*, column 1, lines 34-38,
  "Users can manage...and routing selection")

- Better accuracy (*Tanimura et al*, column 5, lines 14-18, "since the prediction...of
  the system")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made, to combine *Elliott et al* and *Tanimura et al* to obtain the invention

specified in claim 60, a system for electronic communication management. The

modification would have been obvious because one of ordinary skill in the art would

have been motivated to inexpensively improve system flexibility, function, accuracy,

control and performance.

Regarding claim 61:

Elliott et al teaches,

- a contact center configured to send and receive communications via communication

channels including telephone, facsimile, electronic mail, web forms, chat, and wireless

(column 197, lines 7-14, "The CAP 10235...customer service center"; column 17, lines

26-36, "In an embodiment...user entered information"; column 72, lines 16-38, "The

sixth category...simulated Office Environments")

- a modeling engine configured to analyze received a communication to determine an

intent, and further configured to retrieve data related to the intent (column 22, lines 29-

41, "Analysis Services 2144...monitoring, or management")

However, *Elliott et al* doesn't explicitly teach an adaptive knowledge base configured to

store models or a feedback module that compares a response predicted by the

modeling engine in conjunction with the models in the adaptive knowledge base and an

actual response to the received communication to generate feedback, the feedback

being used to update the models in the adaptive knowledge base such that the system

learns from each received communication while

Register et al teaches,

- an adaptive knowledge base configured to store models (column 3, lines 4-27, "A

domain specific...loss of accuracy")

- a feedback module that compares a response predicted by the modeling engine in conjunction with the models in the adaptive knowledge base and an actual response to the received communication to generate feedback, the feedback being used to update the models in the adaptive knowledge base such that the system learns from each received communication (column 3, lines 37-51, "The system of... the categories selected")

Motivation – The portions of the claimed system, an adaptive knowledge base configured to store models; a feedback module configured to analyze responses to the received communications and provide feedback to the modeling engine, which uses the feedback to update the models in the adaptive knowledge base, would have been highly desirable features in this art for

- Increasing management and control abilities (*Elliott et al*, column 1, lines 34-38, "Users can manage... and routing selection")

- Decreasing costs without compromising quality (*Register et al,* column 1, lines 13-19, "The growing volume... to textual information")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to combine *Elliott et al* and *Register et al* to obtain the invention specified in claim 61, a system for electronic communication management. The modification would have been obvious because one of ordinary skill in the art would have been motivated to inexpensively improve system flexibility, function and control.

Regarding claim 62:

Rejection of claim 61 is incorporated. Claim 62's further limitations are taught in *Elliott et al*: the modeling engine gains knowledge from communications on one communication channel and applies the knowledge to communications on another communication channel (column 13, lines 28-42, "The ISN 4... for call processing").

Therefore, claim 62 is rejected under the same rationale as claim 61.

Regarding claim 63:

Elliott et al teaches,

- receiving a communication (column 197, lines 7-14, "The CAP 10235...customer service center")

- analyzing the content of the communication to identify at least one concept of the communication (column 22, lines 29-41, "Analysis Services 2144...monitoring, or management")

- creating a model of the communication using the at least one concept (column 39, lines 56-67, "The Resource Management...Architecture in particular"; column 40, lines 1-25, "c) Objectives...that utilize them")

However, *Elliott et al* doesn't explicitly teach comparing the model of the communication to a set of adaptive models to produce a predicted response to the communication, preparing an actual response to the communication, comparing the predicted response and the actual response to produce feedback and using the feedback to modify at least one of the set of adaptive models such that the set of adaptive models learns with each received communication while

Tanimura et al teaches,

- predicting a response to the communication based on the intent, producing a predicted

response (column 1, lines 53-58, "The monitoring apparatus...data storage section")

- preparing an actual response to the communication (column 1, lines 66-67, "since the

abnormality...range which is"; column 2, lines 1-4, "determined from a...the observation

system")

- comparing the predicted response and the actual response to produce feedback

(column 1, lines 58-65, "The predicting section...the compared result")

Bigus teaches,

- neural networks for dynamically modeling system configurations and performance as

well as controlling allocation of resources (Abstract, sentence 1-4, "In a system...model

neural network")

- comparing the model of the communication to a set of adaptive models to produce a

predicted response to the communication (column 3, lines 11-35, "This performance

data...those performance goals")

Register et al teaches,

- an adaptive knowledge base configured to store models (column 3, lines 4-27, "A

domain specific...loss of accuracy")

- using the feedback to modify at least one of the set of adaptive models such that the

set of adaptive models learns with each received communication (column 3, lines 37-51,

"The system of...the categories selected")

Bralich et al teaches,

- natural language as the basis for communication and responses (column 1, lines 6-12,

"The present invention... in real time")

Balogh et al teaches,

- automating search and database access (column 1, lines 44-52, "none of the... such

images directly")

Motivation – The portions of the claimed method, comparing the model of the

communication to a set of adaptive models to produce a predicted response to the

communication, preparing an actual response to the communication, comparing the

predicted response and the actual response to produce feedback and using the

feedback to modify at least one of the set of adaptive models such that the set of

adaptive models learns with each received communication, would have been highly

desirable features in this art for

- Increasing management and control abilities (*Elliott et al*, column 1, lines 34-38,

  "Users can manage... and routing selection")

- Better accuracy (*Tanimura et al*, column 5, lines 14-18, "since the prediction... of

  the system")

- Greater control of system performance (*Bigus*, column 3, lines 37-45, "two

  fundamental ideas... resource management algorithms")

- Decreasing costs without compromising quality (*Register et al,* column 1, lines

  13-19, "The growing volume... to textual information")

- Speeding up computation (*Bralich et al,* column 3, lines 58-67, "The grammar

  analysis... grammar analysis problems")

- Verifying database quality (*Balogh et al*, column 3, lines 11-42, "More specifically,

  ingestion...with the image")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made, to combine *Elliott et al*, *Tanimura et al*, *Bigus*, *Register et al*,

Bralich et al and *Balogh et al* to obtain the method specified in claim 63. The

modification would have been obvious because one of ordinary skill in the art would

have been motivated to inexpensively improve system flexibility, function, control,

accuracy, efficiency, quality and performance.

Regarding claim 64:

Rejection of claim 63 is incorporated. Therefore, claim 64 is rejected under the same

rationale as claim 63.

Regarding claim 65:

Rejection of claim 63 is incorporated. Therefore, claim 65 is rejected under the same

rationale as claim 63.

Regarding claim 66:

Rejection of claim 63 is incorporated. Therefore, claim 66 is rejected under the same

rationale as claim 63.

Regarding claim 67:

Rejection of claim 63 is incorporated. Therefore, claim 62 is rejected under the same

rationale as claim 63.

Regarding claim 68:

Rejection of claim 63 is incorporated. Therefore, claim 68 is rejected under the same

rationale as claim 63.

Regarding claim 69:

Rejection of claim 63 is incorporated. Claim 69's further limitations are taught in *Balogh*

et al: the content of the communication includes natural language and metadata

(Abstract, sentences 2-5, "A natural language... images are ordered"). Therefore, claim

69 is rejected under the same rationale as claim 63.

Regarding claim 70:

Rejection of claim 63 is incorporated. Therefore, claim 70 is rejected under the same

rationale as claim 63.

Regarding claim 71:

Rejection of claim 63 is incorporated. Therefore, claim 71 is rejected under the same

rationale as claim 63.

Regarding claim 72:

Rejection of claim 63 is incorporated. Claim 72's further limitations are taught in *Elliott*

et al: the communication is a voice communication (column 13, lines 28-42, "The ISN

4... for call processing"). Therefore, claim 72 is rejected under the same rationale as

claim 63.

Regarding claim 73:

Elliott et al teaches,

- a contact center configured to send and receive communications (column 197, lines 7-

14, "The CAP 10235...customer service center")

- a modeling engine configured to analyze a received communication to determine an

intent, to prepare a model of the communication based on the intent, and to compare

the model of the communication with the models stored in the adaptive knowledge base

to produce a predicted response (column 22, lines 29-41, "Analysis Services

2144...monitoring, or management")

- creating a model of the communication using the at least one concept (column 39,

lines 56-67, "The Resource Management...Architecture in particular"; column 40, lines

1-25, "c) Objectives...that utilize them")

However, *Elliott et al* doesn't explicitly teach an adaptive knowledge base configured to

store models or a feedback module configured to compare the predicted response with

an actual response to the received communication to generate feedback used by the

adaptive knowledge base to modify at least one model such that the system learns from

the received communication while

Tanimura et al teaches,

- predicting a response to the communication based on the intent, producing a predicted

response (column 1, lines 53-58, "The monitoring apparatus...data storage section")

- preparing an actual response to the communication (column 1, lines 66-67, "since the

abnormality...range which is"; column 2, lines 1-4, "determined from a...the observation

system")

- comparing the predicted response and the actual response to produce feedback

(column 1, lines 58-65, "The predicting section...the compared result")

Bigus teaches,

- neural networks for dynamically modeling system configurations and performance as

well as controlling allocation of resources (Abstract, sentence 1-4, "In a system...model

neural network")

- comparing the model of the communication to a set of adaptive models to produce a

predicted response to the communication (column 3, lines 11-35, "This performance

data...those performance goals")

Register et al teaches,

- an adaptive knowledge base configured to store models (column 3, lines 4-27, "A

domain specific...loss of accuracy")

- using the feedback to modify at least one of the set of adaptive models such that the

set of adaptive models learns with each received communication (column 3, lines 37-51,

"The system of...the categories selected")

Bralich et al teaches,

- natural language as the basis for communication and responses (column 1, lines 6-12,

"The present invention...in real time")

Balogh et al teaches,

- automating search and database access (column 1, lines 44-52, "none of the...such

images directly")

Motivation – The portions of the claimed system, an adaptive knowledge base

configured to store models and a feedback module configured to compare the predicted

response with an actual response to the received communication to generate feedback

used by the adaptive knowledge base to modify at least one model such that the system

learns from the received communication, would have been highly desirable features in

this art for

- Increasing management and control abilities (*Elliott et al*, column 1, lines 34-38,

  "Users can manage...and routing selection")

- Better accuracy (*Tanimura et al*, column 5, lines 14-18, "since the prediction...of

  the system")

- Greater control of system performance (*Bigus*, column 3, lines 37-45, "two

  fundamental ideas...resource management algorithms")

- Decreasing costs without compromising quality (*Register et al,* column 1, lines

  13-19, "The growing volume...to textual information")

- Speeding up computation (*Bralich et al,* column 3, lines 58-67, "The grammar

  analysis...grammar analysis problems")

- Verifying database quality (*Balogh et al*, column 3, lines 11-42, "More specifically,

  ingestion...with the image")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made, to combine *Elliott et al, Tanimura et al, Bigus, Register et al,*

Bralich et al and *Balogh et al* to obtain the invention specified in claim 73, a system for electronic communication management. The modification would have been obvious because one of ordinary skill in the art would have been motivated to inexpensively improve system flexibility, function, control, accuracy, efficiency, quality and performance.

Regarding claim 74:

Rejection of claim 73 is incorporated. Claim 74's further limitations are taught in *Elliott et al*: a human agent produces the actual response to the received communication (column 13, lines 28-42, "The ISN 4... for call processing"). Therefore, claim 74 is rejected under the same rationale as claim 73.

Regarding claim 75:

Rejection of claim 73 is incorporated. Therefore, claim 75 is rejected under the same rationale as claim 73.

Regarding claim 76:

Rejection of claim 73 is incorporated. Claim 76's further limitations (the modeling engine is further configured to determine a plurality of intents in the received communication) are taught in *Elliott et al* and cited in the rejection of claim 74. Therefore, claim 76 is rejected under the same rationale as claims 73 and 74.

Regarding claim 78:

Elliott et al teaches,

- receiving a communication (column 197, lines 7-14, "The CAP 10235... customer service center")

- creating a model of the communication (column 22, lines 29-41, "Analysis Services

2144...monitoring, or management"; column 39, lines 56-67, "The Resource

Management...Architecture in particular"; column 40, lines 1-25, "c) Objectives...that

utilize them")

However, *Elliott et al* doesn't explicitly teach comparing the model of the communication

to a set of adaptive models to determine a category for the communication, comparing

the determined category with an actual category for the communication to produce

feedback or updating the set of adaptive models according to the feedback while

Tanimura et al teaches,

- predicting a response to the communication based on the intent, producing a predicted

response (column 1, lines 53-58, "The monitoring apparatus...data storage section")

- preparing an actual response to the communication (column 1, lines 66-67, "since the

abnormality...range which is"; column 2, lines 1-4, "determined from a...the observation

system")

- comparing the determined category with an actual category for the communication to

produce feedback (column 1, lines 58-65, "The predicting section...the compared

result")

Bigus teaches,

- neural networks for dynamically modeling system configurations and performance as

well as controlling allocation of resources (Abstract, sentence 1-4, "In a system...model

neural network")

- comparing a model of the communication to a set of adaptive models to determine a

category for the communication (column 3, lines 11-35, "This performance data...those

performance goals")

Register et al teaches,

- an adaptive knowledge base configured to store models (column 3, lines 4-27, "A

domain specific...loss of accuracy")

- updating the set of adaptive models according to the feedback (column 3, lines 37-51,

"The system of...the categories selected")

Bralich et al teaches,

- natural language as the basis for communication and responses (column 1, lines 6-12,

"The present invention...in real time")

Balogh et al teaches,

- automating search and database access (column 1, lines 44-52, "none of the...such

images directly")

Motivation – The portions of the claimed method, comparing the model of the

communication to a set of adaptive models to determine a category for the

communication, comparing the determined category with an actual category for the

communication to produce feedback and updating the set of adaptive models according

to the feedback, would have been highly desirable features in this art for

- Increasing management and control abilities (*Elliott et al*, column 1, lines 34-38,

  "Users can manage...and routing selection")

- Better accuracy (*Tanimura et al*, column 5, lines 14-18, "since the prediction...of the system")

- Greater control of system performance (*Bigus*, column 3, lines 37-45, "two fundamental ideas...resource management algorithms")

- Decreasing costs without compromising quality (*Register et al,* column 1, lines 13-19, "The growing volume...to textual information")

- Speeding up computation (*Bralich et al,* column 3, lines 58-67, "The grammar analysis...grammar analysis problems")

- Verifying database quality (*Balogh et al*, column 3, lines 11-42, "More specifically, ingestion...with the image")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to combine *Elliott et al*, *Tanimura et al*, *Bigus*, *Register et al*, *Bralich et al* and *Balogh et al* to obtain the invention specified in claim 78, a method for real-time learning. The modification would have been obvious because one of ordinary skill in the art would have been motivated to inexpensively improve system flexibility, function, control, accuracy, efficiency, quality and performance.

Regarding claim 77:

Rejection of claim 78 is incorporated. Therefore, claim 77 is rejected under the same rationale as claim 78.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure:

- *Elliott et al* U.S. Patent Number 5,867,495

- *Register et al* U.S. Patent Number 5,371,807

- *Bralich et al* U.S. Patent Number 5,878,385

- *Tanimura et al* U.S. Patent Number 5,890,142

- *Bigus* U.S. Patent Number 5,745,652

- *Balogh et al* U.S. Patent Number 5,493,677

- *Broomhead et al*; U.S. Patent Number 5,835,682

- *Miloslavsky*; U.S. Patent Number 5,765,033

- *Morelli et al*; Predicting Technical Communication in Product Development

Organizations; IEEE Transactions on Engineering Management; Vol. 42, Iss. 3; August

1995; pp 215-222

- *McKinnon et al*; Data Communications and Management of a Distributed Network of

Automated Data Acquisition and Analysis Systems; 1997 IEEE Nuclear Science

Symposium; Vol. 1; 9-15 November 1997; pp 730-733

Any inquiry concerning this communication or earlier communications from the

Office should be directed to Meltin Bell whose telephone number is 703-305-0362.

This Examiner can normally be reached on Mon - Fri 7:30 am - 4:30 pm.

If attempts to reach this Examiner by telephone are unsuccessful, his supervisor,

Anil Khatri, can be reached on 703-305-0282. The fax phone number for the

organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is 703-305-

3900.

MB / *OM. M*.
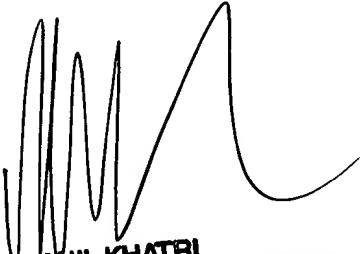
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